

## REMARKS

Applicants thank the Examiner for indicating that the subject matter of claims 4-9, 13, 15-24 and 26 is allowable. Claims 1-39 are currently pending in the present application. New claims 27-39 have been added to cover additional embodiments. Claims 7, 10, 11, and 23 have been cancelled without prejudice to offset the cost of the added claims. The amendments to the claims either broaden the scope of the claims or use equivalent terminology and, therefore, are not limiting. The amendments to the claims are supported by the application as originally filed, do not add new matter, and are otherwise proper. Applicants respectfully request entry of this Amendment in its entirety.

The specification has also been amended to state the correct claim for priority as indicated in the executed Declaration and Power of Attorney Document filed with the Response to Notice of Missing Parts dated January 8, 2002. Also enclosed herewith is an Application Data Sheet reflecting the correct priority claim and a Request for Corrected Filing Receipt indicating the correct priority claim. The specification has also been amended to properly identify the Iso-C and Iso-G bases set forth in some of the examples and to use consistent terminology for the characters identifying the Iso-C and Iso-G bases. Support for these amendments can be found in the last sentence of paragraph [0051]. Applicants note that only the Table headings for Tables 1, 2, 3, 4, 7 and 8 have been amended but no changes have been made to Tables 1, 2, 3, 4, 7 and 8 themselves.

Applicants note that Shumaker *et al.* was provided with the Office Action but was neither cited in the Office Action nor in the Notice of References Cited. Applicants respectfully request that Shumaker *et al.* be noted in an updated Notice of References cited.

In view of the above amendment and following remarks, Applicants respectfully request reconsideration of the claims and submit that the application is in condition for allowance. This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s)

remain under examination in the application, are presented, with an appropriate defined status identifier. None of the amendments to the claims are limiting.

### **I. Sequence Rules**

The Office Action noted that the present application "fails to comply with the requirements of 37 CFR 1.821." Applicants have submitted a sequence listing in the present application and respectfully request acknowledgement of the sequence listing in the next Office communication.

### **II. Claim Objection**

In the Office Action, claim 24 was objected to because it did not end with a period. Applicants have amended claim 24 to end with a period and respectfully request withdrawal of this objection.

### **II. Claim Rejections – 35 U.S.C. § 112**

In the Office Action, claims 20-23 and 26 were rejected as indefinite for various reasons. Specifically, claim 20 was rejected for reciting "the analyte-specific sequence" because the phrase lacked antecedent basis. Applicants have amended claim 20 to provide proper antecedent basis for this phrase. Claim 21 was rejected "because it is unclear what is intended by the phrase 'detecting the hybridization of at least to extension product to at least two capture oligos.' on line 21. It appears that the first 'to' in line 21 should actually be 'two.'" Applicants have deleted the offending phrase from claim 21. Claim 26 was rejected as indefinite "because it is unclear what is intended by the phrase 'non-complementary sequence.'... It appears that the applicant intends the second primer to comprise a first and second sequence wherein the first sequence is non-complementary to the analyte sequence and a second sequence complementary to the analyte sequence." Claim 26 has been amended to clarify what is intended by the phrase 'non-complementary sequence.' In light of the claim amendments and comments, Applicants respectfully request the Examiner withdraw these rejections.

### **III. Claim Rejections Under 35 U.S.C. § 102**

In the Office Action, claims 1-2, 8, 10-12, and 14 were anticipated by Ugozzoli *et al.* Specifically, the Office Action stated:

Please note that the limitation wherein the capture oligo is to comprise a molecular recognition sequence comprising at least one non-standard base is met by Ugozzoli *et al.* wherein these authors teach that their capture oligos are prepared by placing a spacer of three 1,3 propanediol nucleosides at the 3' end of the capture oligo such that the capture oligos will comprise a 3' amino group.

Applicants respectfully traverse this rejection. As stated in the MPEP, "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP §2131. Based on this standard Ugozzoli *et al.* cannot anticipate the present claims because they do not teach each and every element of the claims. Specifically, Ugozzoli *et al.* fail to teach a capture oligonucleotide containing a non-standard base because the 1,3 propanediol spacer is not a non-standard base as defined in the application, nor would it be considered to be a base at all by the skilled artisan. The present application explicitly states: "By 'non-standard base' it is meant a base that other than A, G, C, T, or U that is susceptible of incorporation into an oligonucleotide and which is capable of base-pairing by hydrogen bonding, or by hydrophobic, entropic, or van der Waals interactions to form base pairs with a complementary base." Paragraph [0051]. The 1,3 propanediol spacer of Ugozzoli *et al.* cannot meet this definition because: (1) it is merely a 3 carbon *spacer* (i.e. propane) with terminal -OH groups (i.e. 1,3-diol); (2) it is not "a base... other than A, G, C, T, or U"; and (3) it is not "capable of base-pairing... to form base pairs with a complementary base". Because Ugozzoli *et al.* do not teach each and every element of the present claims, Ugozzoli *et al.* cannot anticipate the claims and Applicants respectfully request the Examiner withdraw this rejection.

In the Office Action, claim 25 was rejected as being anticipated by Wallace [WO 94/21820]. The Office Action stated that:

Please note that the limitation in Claim 25 wherein the capture oligo is to comprise a molecular recognition sequence having at least one non-standard base is met by Wallace wherein this author teaches that their capture oligos are prepared by placing a spacer of three 1,3 propane diol nucleosides at the 3' end of the capture oligo such that the capture oligos will comprise a 3' amino group (exactly as described by Ugozzoli *et al.* in 1992).

The Examiner is correct that 1,3 propane diol taught by Wallace is exactly the same as disclosed in Ugozzoli *et al.*, and, in fact, Wallace cites Ugozzoli *et al.* on page 10, lines 21-22. Despite this, the 1,3 propanediol taught by Wallace cannot anticipate the present non-standard base for the reasons stated above. Wallace explicitly admits as much by stating that "the [1,3 ]propane diol... maintain[s] the distance between the 3' and 5' phosphate linkage in the DNA backbone but lack[s] the nucleosidic base which could stabilize duplex DNA by both base pairing and base stacking." Page 9, lines 16-20 (emphasis added). This is in direct contrast to the definition of a standard base "which is capable of base-pairing... to form base pairs with a complementary base." Accordingly, Wallace clearly admits that 1,3 propanediol cannot meet the non-standard base element of the present claims. Therefore, Wallace cannot anticipate claim 25 and Applicants respectfully request the Examiner withdraw this rejection.

#### **IV. Claim Rejections Under 35 U.S.C. §103**

In the Office Action, claim 3 was rejected "as being unpatentable over Ugozzoli *et al.* (1992) as applied against Claim 1 above and further in view of Hornes *et al.* [WO9006042 (1990)]." In order to state a proper *prima facie* case of obviousness, the prior art references must teach or suggest all of the claim elements. MPEP §2142. However, the combination of Ugozzoli *et al.* and Hornes *et al.*, cannot state a *prima facie* case of obviousness because the references, either alone or in combination, fail to teach or suggest a capture oligonucleotide having non-standard bases. The rejection relies on "Ugozzoli *et al.* [for] teach[ing] all of the limitations of Claim 3 except these authors do not teach an embodiment wherein the support comprises a solid particle." However, Ugozzoli *et al.* fail to teach the use of a capture oligonucleotide having a non-standard as discussed above. Hornes *et al.* fail to overcome this deficiency as they do not disclose the use of non-standard bases and are only cited for teaching a support that is a solid

particle. Accordingly, the combination of Ugozzoli *et al.* and Hornes *et al.* cannot state a proper *prima facie* case of obviousness because the references, either alone or in combination, do not teach or suggest all of the elements of the present claims. Therefore, Applicants respectfully request that the Examiner withdraw this rejection.

**V. Claim Objections and Allowable Subject Matter**

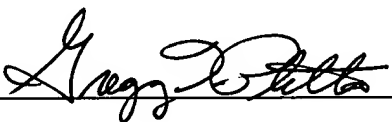
The Examiner indicated that the subject matter of claims 4-9, 13, 15-24 and 26 is allowable but that claims 4-9, 13, and 15-16 are objected to because they are dependent upon a rejected independent base claim. Applicants thank the Examiner for indicating that the subject matter of these claims is allowable and respectfully submit that the independent claim from which claims 4-9, 13, and 15-16 are dependent upon is also allowable for the reasons set forth above.

**CONCLUSION**

In view of the above remarks, it is respectfully submitted that this application is in condition for allowance. Early notice to that effect is earnestly solicited. The Examiner is invited to telephone the undersigned at the number listed below if the Examiner believes such would be helpful in advancing the application to issue.

Respectfully submitted,

Date January 31, 2004

By 

EraGen Biosciences, Inc.

Customer Number: 33534

Telephone: (608) 662-9000 x345

Facsimile: (608) 662-9003

Gregory T. Pletta

Attorney for Applicants

Registration No. 47,864